

Claims 24 and 28 -- 35 U.S.C. § 112, First Paragraph

The rejection of claims 24 and 28 under 35 U.S.C. § 112, first paragraph, as allegedly containing subject matter lacking an adequate description in the specification. The Examiner stated that:

[T]here is no specific disclosure of the keyboard including the individual keys which are arranged in a "DVORAK" layout, nor is any such layout illustrated. Note also that no "Qwerty" keyboard is fully illustrated as is required by the presence of claim 24. See 37 CFR 1.83 (a) first sentence. All claimed subject matter must be illustrated.

Office Action at page 2. In view of the following remarks, the rejection is respectfully traversed.

Applicant respectfully points out that 37 C.F.R. § 1.83 relates to *the content of drawings*. Section 1.81, however, establishes the appropriate standard for determining *whether a drawing is necessary*. Section 1.81(a) states that a drawing is required "where necessary for the understanding of the subject matter sought to be patented." This language is closely related to the appropriate standard for fulfilling the requirements of 35 C.F.R. § 112, first paragraph, with respect to an adequate written description. The Examiner's application of 37 C.F.R. § 1.83 without first considering the standard of 37 C.F.R. § 1.81 is not proper. If a drawing is not "necessary for the understanding of the subject matter," it need not be included.

The Federal Circuit has stated that "[a] patent need not teach, and preferably omits, that which is well known in the art." *Spectra-Physics, Inc. v. Coherent, Inc.* 3 USPQ2d 1737 (Fed. Cir.), *cert. denied* 484 U.S. 954 (1987)(comment relating to enablement). Further, the Federal Circuit has stated that: "[I]psis verbis disclosure is not necessary to satisfy the written description requirement of section 112. Instead, the disclosure need only reasonably convey to persons skilled in the art that the inventor had possession of the subject matter in question." *Fujikawa v. Wattanasin*, 39 USPQ2d 1895 (Fed. Cir. 1996). Applicant's specification clearly referenced both

qwerty and Dvorak keyboard layouts, as features of particular embodiments of the present invention. See the Specification, page 2, line 1, through page 3, line 11 (Published parent application, PCT/US94/09827).

In Applicant's previous replies, *e.g.* the Amendment and Response under 37 C.F.R. § 1.116 filed October 3, 1997, Applicant has fully established that the keyboard layouts known as "qwerty" and "Dvorak" are very well-known in the art. Applicant has even pointed to a reference, cited by the Examiner, which taught that both terms are well-known in the art. *See* Herzog, at col. 3, lines 51-60.

In view of the appropriate legal standard, and arguments already fully presented and of record in this Application, Applicant respectfully asserts that the rejection of claims 24 and 28 under 35 U.S.C. § 112, first paragraph, is in error and must be withdrawn.

Claims 1-19, 21-25, 27 and 28 -- 35 U.S.C. §103(a)

The rejection of claims 1-19, 21-25, 27 and 28 under 35 U.S.C. §103(a) as allegedly made obvious by U.S. Patent No. 5,334,976 (Wang) in view of each of U.S. Patent No. 4,669,903 (Herzog) and U.S. Patent No. 5,143,462 (Klauber) is respectfully traversed.

Independent claims 1 and 23 recite that the keys have a keystroke travel range of about 0.9 to 6 millimeters. Claims 1 and 23 also recite horizontal key spacing of 10.8 to 16.4 millimeters *and vertical key spacing of 10.8 to 18.0 millimeters*, each centerline to centerline.

In contrast to the presently claimed input apparatus, the keyboard disclosed in the Wang patent is a membrane keyboard and therefore does not have a meaningful keystroke travel range.

The keys on a membrane style keyboard have limited, if any, keystroke travel range. Thus, the keys on the keyboard taught by Wang, would not have a keystroke travel range of at least 0.9 millimeters, as recited in Applicant's claims.

Further, Wang taught a combination of stylus-actuated and finger-actuated keys. For spacing between any finger actuated keys, Wang taught a minimum vertical center-to-center spacing of 18 mm (as noted by the Examiner on page 3 of the Office Action). In Wang, smaller spacings disclosed refer either to the spacing between stylus actuated keys or between finger actuated and stylus actuated keys. The smaller spacing dimensions disclosed are, therefore, irrelevant to the present invention as they do not pertain to a keyboard designed solely with finger actuated keys.

Applicant's claimed vertical spacing range is 10.8 to 18.0 millimeters (independent claims 1 and 23). This range does not overlap that disclosed by Wang for finger actuated keys. As noted above, the smaller vertical spacing dimensions disclosed by Wang all pertain to distances between finger actuated and adjacent stylus actuated keys, or between adjacent stylus actuated keys.

Further, Applicant's claimed horizontal spacing range must be considered in combination with Applicant's other dimensional and operational requirements, *i.e.* the recited vertical spacing and the keystroke travel range as discussed above. The combination of features of Applicant's claimed invention provides the advantages disclosed for touch-typists with small hands, whether the typist is an adult or a child.

Wang only discloses a keyboard having a combination of stylus actuated and finger actuated keys. Wang fails to teach or suggest Applicant's invention because Wang fails to

disclose dimensions or features relating to finger actuated keys as disclosed and claimed by Applicant.

The Examiner asserts, however, that Herzog and Klauber taught “conventional keys,” and alleged that “it would have been obvious to one of ordinary skill in the art to modify the keyboard of Wang by incorporating the keyboard teachings of Herzog et al. and Klauber to improve typing feel.” Office Action at page 3.

As noted above, Wang fails to disclose the features of Applicant’s claimed invention because Wang’s disclosure of smaller center-to-center spacing relates only to stylus actuated keys, or a combination of finger and stylus actuated keys. Wang does not disclose smaller key spacing, especially vertical spacing, in relation to spacing between finger actuated keys.

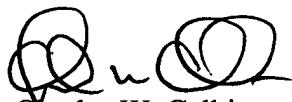
The Examiner only asserts that Herzog and Klauber taught “conventional keys,” “conventional keystroke travel range,” and a “conventional keyboard” which “can be [used in] touch typing.” Therefore, the Examiner has acknowledged that neither of the secondary references taught a reduced key spacing to accommodate small hands as disclosed and claimed by Applicant.

The teaching of Wang, relating solely to a keyboard combining stylus actuated keys with finger actuated keys, fails to teach or suggest Applicant’s claimed invention. The secondary references, relating solely to conventional keyboard features, fails to teach or suggest Applicant’s invention, either individually or in combination with Wang. Accordingly, Applicant respectfully asserts that the rejection of Applicant’s claims under 35 U.S.C. § 103(a) was in error and must be withdrawn.

Conclusion

It is believed that all rejections have been properly traversed and that the application is in condition for immediate allowance. Early notice to that effect is respectfully solicited. The Examiner is invited to contact the undersigned at (336) 607-7315 to discuss any matter relating to the present application.

Respectfully submitted,



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